



The American Mineralogist

Journal of the Mineralogical Society of America

VOLUME 53, 1968

Editor

William T. Holser, *Chevron Oil Field Research Co., La Habra, California*

Board of Associate Editors

George W. Brindley, *Pennsylvania State University, University Park, Pennsylvania*

Gabrielle Donnay, *Geophysical Laboratory, Washington, D. C.*

Arthur F. Hagner, *Northwestern University, Evanston, Illinois*

Vernon J. Hurst, *University of Georgia, Athens, Georgia*

W. Barclay Kamb, *California Institute of Technology, Pasadena, California*

E-an Zen, *U. S. Geological Survey, Washington, D. C.*

Printed by George Banta Company, Inc., Menasha, Wisconsin

Printed in the United States of America

Copyright © 1969 by the Mineralogical Society of America

CONTENTS OF VOLUME 53

NOS. 1 AND 2, JANUARY-FEBRUARY, 1968

Sanjuanite, a new hydrated basic sulfate-phosphate of aluminum.....	1
.....M. E. J. de Abeledo, V. Angelelli, M. A. R. de Benyacar and C. Gordillo	
The crystal structure of walstromite.....	9
.....L. S. Dent Glasser and F. P. Glasser	
The crystal structure of a hexagonal Al-serpentine.....	14
.....I. Cyrus Jahanbagloo and Tibor Zoltai	
The crystal structure of an adularia and a refinement of the structure of orthoclase	25
.....Alan A. Colville and Paul H. Ribbe	
X-ray and optical study of alkali feldspar: I. Determination of composition and structural state from refined unit-cell parameters and 2V.....	38
.....Thomas L. Wright and David B. Stewart	
X-ray and optical study of alkali feldspar: II. An X-ray method for determining the composition and structural state from measurement of 2θ values for three reflections.....	88
.....Thomas L. Wright	
Revised dispersion method for low plagioclase.....	105
.....S. A. Morse	
Composition and structural state of plagioclases from the lower part of the Eastern Bushveld Complex, South Africa.....	116
.....George A. Desborough and Eugene N. Cameron	
Thermodynamics of the disordering process in albite.....	123
.....J. L. Holm and O. J. Kleppa	
Studies in the system BaO-Al ₂ O ₃ -SiO ₂ : I. The polymorphism of celsian.....	134
.....H. C. Lin and W. R. Foster	
Phase relations and mineral assemblages in the copper-lead-sulfur system.....	145
.....James R. Craig and Gunnar Kullerud	
Altered chrome ores from the Coolac Serpentine Belt, New South Wales, Australia	162
.....H. G. Golding and P. Bayliss	
Analcmite composition in tuffs of the Green River formation of Wyoming.....	184
.....Azuma Iijima and Richard L. Hay	
Chemical differences among the serpentine "polymorphs".....	201
.....Norman J. Page	
Kaolinite crystallization from H-exchanged zeolites.....	216
.....C. R. De Kimpe and J. J. Fripiat	
Synthesis of some lead calcium zinc silicates.....	231
.....Jun Ito	
Petrogenesis of ultrabasic and basic inclusions in alkali basalts, Iki Island, Japan	241
.....Ken-ichiro Aoki	
The stability of olivine and pyroxene in the Ni-Mg-Si-O system.....	257
.....F. E. Campbell and P. Roeder	
Optic angle determined conoscopically on the spindle stage: I. Micrometer ocular method.....	269
.....Ray E. Wilcox and Glen A. Izett	
Optic angle determined conoscopically on the spindle stage: II. Selected rotation method.....	278
.....Donald Noble	
The direct and rapid determination of alumina and silica in silicate rocks and minerals by atomic absorption spectroscopy.....	283
.....Amitai Katz	
MINERALOGICAL NOTES: The crystal structure of disordered gersdorffite.....	290
.....P. Bayliss	
The cobaltiferous pyrite series.....	293
.....John F. Riley	
Transformation of aragonite to calcite under hydrothermal conditions.....	295
.....William J. Metzger and Walther M. Barnard	

On the cause of asterism in star corundum.....	K. Nassau	300
The infrared spectrum of dawsonite.....	Patricia A. Estep and Clarence Karr, Jr.	305
Relations of the manganese-calcium silicates, gageite and harstigitite.....	Paul B. Moore	309
Synthesis of the berzeliite ($\text{Ca}_2\text{NaMg}_2\text{As}_3\text{O}_{12}$)—manganese berzeliite ($\text{CaNaMn}_2\text{As}_3\text{O}_{12}$) series (arsenate garnet).....	Jun Ito	316
An electron microscopic study of soil allophane with an ordered structure.....	N. Yoshinaga, H. Yotsumoto and K. Ibe	319
A study of grain contacts in some high-grade metamorphic rocks.....	Sheila M. Mahan and John J. W. Rogers	323
Staining for cordierite and feldspars in thin section.....	Gary M. Boone and E. P. Wheeler, 2nd.	327
On the staining of anorthoclase.....	Arthur B. Ford and Eugene L. Boudette	331
Hydrazine intercalation-intersalation for differentiation of kaolin minerals from chlorites.....	Koji Wada and Hiroshi Yamada	334
High pressure epoxy impregnation of porous materials for thin-section and microprobe analysis.....	John Sinkankas	339
Kinetic considerations in the genesis of growth twinning: A discussion.....	Harald Carstens.	342
Kinetic considerations in the genesis of growth twinning: A reply.....	Thomas W. Donnelly.	344
Unit-cell parameters of the microcline-low albite and the sanidine-high albite solid solution series: A correction.....	Philip M. Orville	346
Near infrared spectrum of beryl: A correction.....	K. A. Wickersheim and R. A. Buchanan	347
New Mineral Names.....		348
Book Reviews.....		352
Notices.....		356

NOS. 3 AND 4, MARCH-APRIL, 1968

On locating field boundaries in simple phase diagrams by means of discriminant functions.....	Felix Chayes	359
Classical mineral occurrences: I. Geology and mineralogy of the Rutherford pegmatites, Amelia, Virginia.....	John Sinkankas	373
Magnetic moment of Fe^{2+} in paramagnetic minerals.....	George A. Parks and Salim Akhtar	406
Bermanite and its occurrence in Córdoba, Argentina.....	C. S. Hurlbut, Jr., and L. F. Aristarain	416
Substitutions in apatite: I. Potassium-bearing apatite.....	Dale R. Simpson	432
Compositional, infrared and X-ray analysis of fossil bone.....	Gerald P. Brophy and J. Thomas Nash	445
New data on whewellite.....	Peter B. Leavens	455
Mineralogical study of striped pyroxene in syenite rocks of Sivamalai, South India.....	Mihir K. Bose	464
X-ray data on a fractionated regularly interstratified clay.....	Rodney Tettenhorst, A. A. Levinson and Robert C. McGuire	472
The effect of adsorbent charge on the competitive adsorption of divalent organic cations by layer-silicate minerals.....	S. B. Weed and J. B. Weber	478
MINERALOGICAL NOTES. Zincian daubreelite from the Kota-Kota and St. Mark's enstatite chondrites.....	Klaus Keil	491
Second occurrence of marokite.....	P. R. de Villiers and F. H. Herbstein	495

The system $\text{Ag}_2\text{AuS}_2\text{-Ag}_2\text{S}$	R. B. Graf	496
The thermal stability of purified tridymite: Discussion.....	Stig Holmquist	501
The thermal stability of purified tridymite: Reply.....	W. R. Foster	504
Determination of cation distribution in the cummingtonite-grunerite series by Mössbauer spectra: A correction.....	G. Michael Bancroft, Roger G. Burns and A. G. Maddock	506
New Mineral Names.....		507
Book Reviews.....		512
Notices.....		514
Awards.....		521
Memorials.....		536
Proceedings.....		623
Constitution and By-Laws of the Mineralogical Society of America.....		643
Directory of Fellows and Members of the Mineralogical Society of America.....		647

NOS. 5 AND 6, MAY-JUNE, 1968

Meta-aluminite, a new mineral from Temple Mountain, Utah.....	Clifford Frondel	717
Hydrobasaluminite and basaluminite in Cabaniss Formation (Middle Pennsylvanian), Southeastern Kansas.....	Pei-Lin Tien	722
Crystal chemistry of the basic manganese arsenate minerals: II. The crystal structure of allactite.....	Paul B. Moore	733
The crystal structure of graftonite.....	C. Calvo	742
Triclinic talc and associated amphiboles from Gouverneur mining district, New York.....	Malcolm Ross, William L. Smith and William H. Ashton	751
Distribution of iron cations in the crocidolite structure.....	Roger G. Burns and F. J. Prentice	770
The characterization of beryl and emerald by visible and infrared absorption spectroscopy.....	D. L. Wood and K. Nassau	777
An examination of red beryl from Utah.....	K. Nassau and D. L. Wood	801
Crystal structures of natural olivines.....	J. D. Birlle, G. V. Gibbs, P. B. Moore and J. V. Smith	807
Hillocks on first-order prism faces of synthetic quartz.....	M. S. Joshi and P. N. Kotru	825
Crystal-chemical characterization of omphacites.....	Joan R. Clark and J. J. Papike	840
The relationship between senaite, magneto-plumbite, and davidite.....	Roland C. Rouse and Donald R. Peacor	869
Subsolidus relations on the dolomite join, $\text{CaMg}(\text{CO}_3)_2\text{-CaFe}(\text{CO}_3)_2\text{-CaMn}(\text{CO}_3)_2$	P. E. Rosenberg	880
Silicate apatites and oxyapatites.....	Jun Ito	890
Order-disorder relationships of plagioclase in a porphyritic basalt flow.....	Jerry M. Hoffer	908
Kinetic and electron optical studies of the reaction processes between kaolinite and sodium carbonate.....	Yasushi Kubo, Goro Yamaguchi and Komei Kasahara	917
Aqueous solubility studies of high-alumina and clay minerals.....	A. L. Reesman and W. D. Keller	929
Synthesis of the scandium analogue of beryl.....	Clifford Frondel and Jun Ito	943
Convolute zoning of plagioclase phenocrysts in Miocene volcanics from the Western Santa Monica Mountains, California.....	Bruce A. Blackerby	954

On the relative scarcity of paragonite.....	Charles V. Guidotti	963
Palygorskite from Atlantic deep sea sediments.....	Enrico Bonatti and Oiva Joensuu	975
Sepiolite from Pluvial Mound Lake, Lynn and Terry Counties, Texas.....	W. T. Parry and C. C. Reeves, Jr.	984
Distribution of elements between coexisting minerals and the nature of solid solution in garnet.....	S. K. Saxena	994
The study of clay minerals by small-angle X-ray scattering.....	Takashi Watanabe	1015
MINERALOGICAL NOTES: The crystal structure and the chemical composition of vauxite.....	W. H. Baur and B. Rama Rao	1025
Electron diffraction data for some members of the metatorbernite group.....	M. E. J. de Abeledo, E. E. Galloni and M. A. R. de Benyacar	1028
Low-angle X-ray diffraction maximum due to textural periodicity in heated gibbsite.....	A. W. L. Veen and J. Wiersma	1033
Synthesis of the grossularite-spessartite series.....	Jun Ito and Clifford Frondel	1036
Some experimental data on the stability of pumpellyite.....	C. A. Landis and J. Rogers	1038
Mica periodotite, wyomingite, and associated potassic igneous rocks in North-eastern Utah.....	Myron G. Best, Lyle F. Henage and John A. S. Adams	1041
Mineralogy of a zoned replacement body from the Blue Mountain litchfieldite, Peterborough County, Ontario.....	A. D. Edgar	1048
An X-ray background method for the determination of total iron in trioctahedral micas.....	William C. Hood	1054
A technique for mounting, sectioning and polishing particles smaller than 30 microns in diameter.....	Robert B. Finkelman and Michael B. Duke	1056
Magnesium aluminum carbonate hydroxide tetrahydrate: A discussion.....	Rudolf Allmann	1057
Magnesium aluminum carbonate hydroxide tetrahydrate: A reply.....	G. J. Ross and H. Kodama	1059
Morinite-apatite-whitlockite: A correction.....	D. Jerome Fisher	1060
Pendletonite: A correction.....	Joseph Murdoch and Theodore A. Geissman	1061
Thermal behavior of $\text{SiO}_2\text{-X}$ and its relation to the natural silica minerals: A correction.....	Robert Greenwood	1062
New Mineral Names.....	Michael Fleischer	1063
Book Reviews.....		1067
Notices.....		1071

NOS. 7 AND 8, JULY-AUGUST, 1968

Poughite, a new tellurite mineral from Mexico and Honduras.....	Richard V. Gaines	1075
Braitschite, a new hydrous calcium rare-earth borate mineral from the Paradox Basin, Grand County, Utah.....	Omer B. Raup	
Arthur J. Gude, 3rd, E. J. Dwornik, Frank Cuttitta and Harry J. Rose, Jr.		1081
The crystal structure of augelite.....	T. Araki, J. J. Finney and T. Zoltai	1096
Substitutions of the type $(\text{Sb}_{0.5}^{5+}\text{Fe}_{0.5}^{3+}) \rightleftharpoons (\text{Ti}^{4+})$: The crystal structure of melano-sibite.....	Paul B. Moore	1104
The crystal structure of chlorophoenicite.....	Paul B. Moore	1110
Determination and refinement of the structure of heulandite.....	A. B. Merkle and M. Slaughter	1120
The crystal structure of staurolite.....	J. V. Smith	1139
The crystal structure and cation distribution of glaucophane.....	J. J. Papike and Joan R. Clark	1156

The polarized optical absorption spectra of tourmaline, cordierite, chloritoid and vivianite: ferrous-ferric electronic interaction as a source of pleochroism.....	G. H. Faye, P. G. Manning and E. H. Nickel	1174
Eucryptite and bikitaite from King's Mountain, North Carolina.....	Peter B. Leavens, C. S. Hurlbut, Jr., and Joseph A. Nelen	1202
Synthetic trechmannite.....	George W. Roland	1208
Frequency distribution of compositions in the barite-celestite series.....	Jeffrey S. Hanor	1215
Scandium content of some aluminum phosphates.....	Clifford Frondel, Jun Ito, and Arthur Montgomery	1223
Selective absorption of n-alkyl alcohol-bromide mixtures by montmorillonites (clay-organic studies XIV).....	Annerose Heydemann and G. W. Brindley	1232
Infrared study of benzonitrile (C_6H_5-CN)-montmorillonite complexes.....	J. M. Serratos	1244
Serpentine rock dissolution as a function of carbon dioxide pressure in aqueous solution.....	W. E. Wildman, M. L. Jackson, and L. D. Whittig	1252
Zincian and manganoan amphiboles from Franklin, New Jersey.....	Cornelis Klein, Jr. and Jun Ito	1264
Syntheses of the scandium analogues of aegirine, spodumene, andradite and melanotekite.....	Jun Ito and Clifford Frondel	1276
The thermochemistry of jadeite.....	T. Hlabse and O. J. Kleppa	1281
High- and low-silica faujasites: A substitutional series.....	Alan C. Wright, J. Paul Rupert, and W. T. Granquist	1293
Eclogitic and other inclusions in the Mineral Breccia Member of the Deborah Volcanic Formation at Kakanui, New Zealand.....	John S. Dickey, Jr.	1304
Eclogite and almandine-jadeite-quartz rock from the Guajira Peninsula, Colombia, South America.....	D. H. Green, J. P. Lockwood, and E. Kiss	1320
Secondary alteration in eclogites from kimberlite pipes.....	G. W. Berg	1336
Origin of some eclogite inclusions in kimberlite.....	Ikuo Kushiro and Ken-ichiro Aoki	1347
Prograde muscovite pseudomorphs after staurolite in the Rangely-Qqoussoc areas, Maine.....	C. V. Guidotti	1368
Comments on serpentinization and related metasomatism.....	P. Černý	1377
Flattened garnets in strongly foliated gneisses from the Grenville Series of the Gananoque area, Ontario.....	W. H. Blackburn and W. H. Dennen	1386
Flux growth and characterization of hexagonal germanium dioxide single crystals.....	C. B. Finch and G. W. Clark	1394
Spindle stage with easily changed liquid and improved crystal holder.....	Francis T. Jones	1399
MINERALOGICAL NOTES. Variation of the refractive index of diamond with hydrostatic pressure to 7 kilobars. E. D. D. Schmidt, J. L. Kirk and K. Vedam		1404
Nomenclature and crystal-chemistry of axinites.....	E. Sanero and G. Gottardi	1407
The proportionality of quartz in myrmekite.....	Evan R. Phillips	1411
Powder density measurement by hydrostatic weighing.....	P. C. Aitcin, G. Garnier, and A. Carles-Gibergues	1413
Antimonian groutite: a correction.....	Cornelis Klein, Jr.	1417
Relation of the manganese-calcium silicates, gageite and harstigitite: a correction.....	Paul B. Moore	1418
New Mineral Names.....		1421
Book Reviews.....		1428
Notices.....		1429

NOS. 9 AND 10, SEPTEMBER-OCTOBER, 1968

Wickenburgite, a new mineral from Arizona.....	Sidney A. Williams	1433
Structural basis of the olivine-spinel stability.....	Barclay Kamb	1439
Order-disorder in $MgAl_2O_4$. The systems: $MgAl_2O_4$ — $LiAl_5O_8$, $MgAl_2O_4$ — $NiCr_2O_4$, $MgAl_2O_4$ — $NiAl_2O_4$, and $NiAl_2O_4$ — $ZnAl_2O_4$	R. K. Datta and Rustum Roy	1456
The thermal expansion of the leucite group of minerals.....	D. Taylor and C. M. B. Henderson	1476
Physical properties of synthetic lepidolites.....	J. L. Munoz	1490
New data on natural phases in the system Ag-Te.....	E. F. Stumpfl and J. Rucklidge	1513
Sphalerite color banding: lack of correlation with iron content, Pine Point, North- west Territories, Canada.....	Edwin Roedder and Edward J. Dwornik	1523
New occurrences and data for jalpaite.....	Donald Grybeck and J. J. Finney	1530
Chromite grains showing altered borders from the Basal Reef, Witwatersrand System.....	P. Mihálik and R. Saager	1543
High-potassium cryptomelane from Tarapaca Province, Chile.....	D. F. Hewett and Raul Salas Olivares	1551
Perrierite, chevkinite, and allanite in Upper Cenozoic ash beds in the Western United States.....	G. A. Izett and R. E. Wilcox	1558
Albite, variety cleavelandite, and the signs of its optic directions.....	D. Jerome Fisher	1568
Authigenic albite from Rhodes.....	M. Kastner and D. R. Waldbaum	1579
Differential solution of plagioclase in supercritical water.....	John B. Adams	1603
Inesite from the Broken Hill Lode, New South Wales, Australia.....	William R. Ryall and Ian M. Threadgold	1614
Hydrothermal epidote formed in the Salton Sea geothermal system, California	Terry E. C. Keith, L. J. Patrick Muffler, and Marcelyn Cremer	1635
Experimental precipitation and genesis of sepiolite at earth-surface conditions.....	Roland Wollast, Fred T. Mackenzie and Owen P. Bricker	1645
Synthetic indium silicate and indium hydrogarnet.....	Jun Ito	1663
Chemical study of phase equilibria in charnockites, Varberg, Sweden.....	S. K. Saxena	1674
The origin of antiperthites from some charnockitic rocks in the New Jersey Precam- brian.....	Thomas A. Vogel, Bennett L. Smith and Robert M. Goodspeed	1696
Calculated powder patterns for five plagioclases.....	I. Y. Borg and D. K. Smith	1709
A lunar and planetary petrographic microscope.....	Alden A. Loomis	1724
MINERALOGICAL NOTES: The X-ray spectrographic determination of sulfur coordination in scapolite.....	B. W. Chappell and A. J. R. White	1735
Inexpensive crystal structure models of framework tetrahedra.....	G. V. Gibbs and G. C. Grender	1738
Infrared spectra of phosphate minerals: splitting and frequency shifts associated with substitution of PO_4^{3-} for AsO_4^{3-} in mimetite ($Pb_3(AsO_4)_3Cl$).....	Hans H. Adler	1740
Hydrothermal investigation of GeO_2	V. G. Hill and Luke L. Y. Chang	1744
Copper zoning in pyrite from Cerro de Pasco, Peru.....	Marco T. Einaudi	1748
Zinc-rich micas from Sterling Hill, New Jersey.....	Clifford Frondel and Marco Einaudi	1752
The refractive index of experimentally hydrated rhyolite glass.....	William Long and Irving Friedman	1754
Stress-corrosion failure and the hydration of glassy silicic rocks.....	Donald C. Noble	1756
Bytownite from Cape Parry, East Greenland.....	E. Wenk, H-R. Wenk and H. Schwander	1759

Improved cold seal pressure vessels to operate to 1100° C at 3 kilobars.....	D. W. Williams	1765
Electron microprobe analysis of vanadium in the presence of titanium.....	Kenneth G. Snetsinger, T. E. Bunch and Klaus Keil	1770
Preparation of thin film sections.....	W. Zeidler	1773
New Mineral Names.....	Michael Fleischer	1775
Book Reviews.....		1781
Notices.....		1787

NOS. 11 AND 12, NOVEMBER–DECEMBER, 1968

Billingsleyite, a new silver sulfosalt.....	Clifford Frondel and Russell M. Honea	1791
Beusite, a new mineral from Argentina, and the graffonite-beusite series.....	C. S. Hurlbut, Jr., and L. F. Aristarain	1799
Teruggite, $4\text{CaO} \cdot \text{MgO} \cdot 6\text{B}_2\text{O}_3 \cdot \text{As}_2\text{O}_5 \cdot 18\text{H}_2\text{O}$, a new mineral from Jujuy, Argentina.....	L. F. Aristarain and C. S. Hurlbut, Jr.	1815
Sonoraite.....	Richard V. Gaines, Gabrielle Donnay, and Max H. Hey	1828
A new chromium garnet end member, knorringite, from Kimberlite.....	Peter H. Nixon and George Hornung	1833
Crystal chemistry of the basic Manganese arsenates: I. The crystal structure of eveite, $\text{Mn}_2(\text{OH})(\text{AsO}_4)$	Paul B. Moore and Joseph R. Smith	1841
On the lattice parameters and superstructures of pyrrhotites.....	M. E. Fleet	1846
The safflorite-loellingite solid solution series.....	Dennis Radcliffe and L. G. Berry	1856
Refinement and comparison of the structures of zoisite and clinozoisite.....	W. A. Dollase	1182
Effects of water desorption on indentation micro-hardness anisotropy in Minerals.....	J. H. Westbrook and P. J. Jorgensen	1899
Pressure dependence of the infrared absorption of calcite.....	Robert N. Schock and Samuel Katz	1910
Electron microprobe analyses of spinels and their alteration product from Mansarip and Taberg, Sweden.....	Nils B. Hollander	1918
Pressure-temperature studies of anatase, brookite, rutile and TiO_2 -II.....	Frank Datchille, P. Y. Simons and Rustum Roy	1929
Synthesis and study of yttrialite.....	Jun Ito and Harold Johnson	1940
Substitutions in apatite: II. Low temperature fluoride-hydroxyl apatite.....	Dale R. Simpson	1953
Mixing properties of sanidine crystalline solutions: I. Calculations based on ion-exchange data.....	J. B. Thompson, Jr. and D. R. Waldbaum	1965
Mixing properties of sanidine crystalline solutions: II. Calculations based on volume data.....	D. R. Waldbaum and J. B. Thompson, Jr.	2000
Distribution of iron and magnesium between coexisting garnet and clinopyroxene in rocks of varying metamorphic grade.....	S. K. Saxena	2018
Distribution of elements in a spherulitic andesite.....	Stephen E. Kesler and Paul W. Weiblen	2025
Precision and components of variance in the modal analysis of a coarse-grained augen gneiss.....	K. Schryver	2036
A systematic approach to indexing powder patterns of lower symmetry using De Wolff's principles.....	K. Viswanathan	2047
Magadiite from Trinity County, California.....	J. L. McAtee, Jr., R. House and H. P. Eugster	2061

Preparation of polished thin sections.....	Grover C. Moreland	2070
MINERALOGICAL NOTES: Reflectivity and microindentation hardness of ferroselite from Colorado and New Mexico.....	E. S. Santos	2075
New data on sarmientite.....	M. E. J. de Abeledo and M. A. R. de Benyacar	2077
Johachidolite, a revised chemical formula.....	W. O. Davies and M. P. Machin	2082
Strontiohilgardite—luc and tyretskite, a structural pair.....	W. O. Davies and M. P. Machin	2084
More data on greigite.....	Sidney A. Williams	2037
Transformation of vaterite to calcite during grinding.....	D. O. Northwood and D. Lewis	2089
The problem of quartz-corundum stability.....	R. M. Carr	2092
Cacoxenite and beraunite from Florida.....	Frank N. Blanchard and Stephen A. Denahan	2096
Synthesis of the scandium analogue of beryl: Errata.....	Clifford Frondel and Jun Ito	2101
Geology and Mineralogy of the Rutherford pegmatites, Amelia, Virginia: A discussion.....	Richard S. Mitchell	2102
New Mineral Names.....	Michael Fleisher	2103
Book Reviews.....		2107
Index to Volume 53.....		2109